

Soy & Health

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New US food pyramid opportunity for soy

The United Soybean Board (USB) has welcomed the newly released US Food Guidance System launched by the United States Department of Agriculture to help educate Americans to make healthier food choices. Consumers are advised to eat more fruits and vegetables, and other foods that supply dietary fibre and nutrients like iron, magnesium, potassium, folic acid and calcium. In addition, consumers are advised take care to limit foods that are high in saturated fat and cholesterol.

USB sees this as a great opportunity for soybeans which are rich in fibre and provide a variety of vitamins and minerals including iron, potassium and folic acid. Consuming soy protein in combination with other protein sources is seen as a great way to reduce overall calories, saturated fat and cholesterol. In addition to providing essential nutrients, soy protein has benefits for cardiovascular health, lower cholesterol and blood pressure, and strengthen bones. (<<http://www.mypyramid.gov/>>)



In this issue

Research p2-3

Latest research news on soy and health

News & products p4

Company news and new product launches

Profile p5

Alpro

Interview with p6&7

Mark Messina

Diary p8

Calendar of conferences, symposia of interest to the soy world

French reports on trans fats and phytoestrogens

The French Food Safety Agency (AFSSA) has recommended that for bakery products, biscuits, croissants and similar products, the level of trans fatty acids should not exceed 1g/100 g of the product as consumed. For table oils, trans fats should amount to no more than 0.5% of total fatty acids, and for margarines and shortenings, trans fats should be a maximum of 1% of total fatty acids. On labelling, the amount of trans fat in a product should be expressed as a percentage of total fat, but no labelling would be required on products which contained less than 0.1 g/100 g of trans fat in the finished product or 0.1% of total fatty acids in table oils, margarines and butter.

In another report AFSSA have come up with some surprising recommendations as a result of concerns about potential hormonal effects of phytoestrogens in soy infant formulas. Despite the large numbers of babies worldwide who have thrived on soy infant formulas and the lack of reported adverse effects in humans AFSSA have recommended that these products should contain less than 1mg/L of reconstituted formula, in aglycone equivalent, and should be labelled accordingly. Even more surprising is the recommendation that soy products, such as soy drinks and desserts, should not be given to children under 3 years of age unless the isoflavone content is reduced to 1mg/L. (See also Mark Messina's interview on p7)

AFSSA website <<http://www.afssa.fr/>>.

To be added to our mailing list and for enquiries regarding advertising or sponsorship please contact Soy Conference THV on +32 57 46 64 46, fax: +32 57 46 95 25 or e-mail: info@soyconference.com (<<http://www.soyconference.com/>>).

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2

Higher isoflavone exposure associated with lower plasma estradiol in women

Research carried out at the Dunn Human Nutrition Unit suggests that higher isoflavone exposure via dietary phytoestrogens is associated with lower plasma estradiol in women. The researchers investigated the relationships among phytoestrogen exposure, polymorphisms in specific genes, plasma estradiol and SHBG (sex hormone binding globulin) levels in 125 free-living postmenopausal women who were taking part in a cohort study (the European Prospective Investigation of Cancer and Nutrition Norfolk). They used three different markers: dietary, urinary and serum phytoestrogens. When they adjusted for age and body mass index the researchers found that urinary diadzein, genistein, glycitein, and serum daidzein and glycitein were negatively correlated with plasma estradiol. The authors concluded that higher isoflavone exposure is associated with lower plasma estradiol in postmenopausal women and that this preliminary study is suggestive of the involvement of diet-gene interactions.

YL Low et al, Cancer Epidemiology Biomarkers & Prevention 2005, Vol 14 No 1, pp213-220.



Soy and breast cancer

According to a meta-analysis published in the April issue of the International Journal of Cancer Prevention regular consumption of soy protein-containing foods and drinks may reduce the risk of breast cancer in women by up to 22%. The authors of the study analysed 12 published epidemiological studies relating to soy consumption and breast cancer in women and found that not only was there a reduction in breast cancer risk in both pre- and post-menopausal women but that adolescent soy intake may be related to a lower risk of developing breast cancer in later life.

Lin Yan et al, Int J of Cancer Prevention 2005 Vol 1 No 4, pp281-293.

Soy's antioxidant power questioned

A study at Tuft's University appears to suggest that soy may not be the powerful antioxidant once thought. Forty two subjects were given four different diets over 6 weeks, one containing animal protein but no soy, one based on animal protein supplemented with soy, one rich in soy, and the last, a soy diet depleted of isoflavones. Researchers found that diets relatively high in soy protein or soy-derived isoflavones have little effect on plasma antioxidant capacity and biomarkers of oxidative stress.

S Vega Lopez et al, The American Journal of Clinical Nutrition 2005, Vol 81, No 1 pp43-49.

Maternal dietary soy and heart health of offspring

According to Canadian research the presence of soybean isoflavones in the maternal diet of rats benefits the heart of their offspring in later adulthood. When isoflavones are absent from the diet of mothers during pregnancy and lactation, the hearts of their offspring have larger ventricular cavities, longer cardiac cells and progress more rapidly towards heart failure than in rats who had been fed soy.

E Souzeau et al, Am J of Physiology (March 18 on line version at - <http://ajpheart.physiology.org/cgi/reprint/00061.2005v1>).

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3

Meta analysis of soy protein isoflavones on lipid profile

Researchers at the Chinese University of Hong Kong carried out a meta analysis to identify and quantify the effects of soy protein containing isoflavones on blood lipid profiles. Twenty three randomised controlled trials published from 1995 to 2002 were identified and the results were analysed for net changes in serum lipid concentrations using fixed-effect or random-effect models.

Results from the study showed that soy protein with isoflavones intact were associated with significant decreases in serum total cholesterol, LDL cholesterol, and triacylglycerols and significant increases in serum HDL cholesterol. The reductions in total and LDL cholesterol were larger in men than in women. Initial total cholesterol concentrations had a powerful effect on changes in total and HDL cholesterol, especially in subjects with hypercholesterolemia. The strongest lowering effects on total cholesterol, LDL cholesterol, and triacylglycerol occurred with the short initial period of intervention, whereas improvements in HDL cholesterol were only observed in studies of over 12 week duration. Tablets containing extracted soy isoflavones did not have a significant effect on total cholesterol reduction.

S Zhan and SC Ho. Am J of Clinical Nutrition 2005, Vol 81 No 2 pp397-408.



Soy protein and calcium absorption

In two separate studies scientists at the US-government funded Agricultural Research Service have investigated the impact of meat protein, milk protein and soy protein on calcium metabolism in postmenopausal women. Both studies are carried out using small numbers of subjects. In the first study, the subjects followed either a meat protein or a soy protein diet (25gms of high isoflavone soy protein was substituted for an equivalent amount of meat protein) for seven weeks before crossing over to the other regime after a two week break. Each diet contained typical daily intakes of calcium and other nutrients. At the end of the study, the researchers found no evidence of differences in calcium or bone metabolism after either diet.

The second study compared soy protein enriched with isoflavones, soy protein devoid of isoflavones, and a casein-whey protein isolate (control) diet. This study found a lower urinary calcium in those subjects consuming the soy diets but calcium absorption was unaffected. The authors conclude that soy isoflavones did not significantly affect calcium absorption. They did not exclude, however, the possibility that soy isoflavones may have an effect at high doses or that they may be more effective immediately after menopause when bone turnover is higher.

F Roughhead et al, J Clinical Endocrinology & Metabolism 2005 Vol 90 No 1 pp181-189.

L Spence et al, Am J Clinical Nutrition 2005 Vol81 No 4 pp916-922.

Soy diet protects kidneys of obese rats

Researchers in Mexico have observed that obese rats fed with soy had improved renal function, nitrates and nitrates urinary excretion, proteinuria plus reduced glomerulosclerosis, tubular dilation, interstitial fibrosis and extracapillar proliferation.

J Trujillo et al, Am J of Physiology 2005, Vol 288 No 1: F108-F116.

The Solae
Company.

www.solae.com



Great Tasting
Nutrition



4

First whole-grain soy flour

Kerry Americas, part of the Kerry Group plc, has introduced a whole grain soy flour in the US. 'Nutriant' whole-grain soy flour meets the American Association of Cereal Chemists definition for whole grains and is a direct response by the company to meet demand from the grain-based food industries as they try to develop products that meet new US dietary and nutritional recommendations.

The Dietary Guidelines for Americans 2005 recommend that Americans consume three or more ounce-equivalents of whole-grain products per day with the rest of the recommended grains coming from enriched or whole-grain products. Available in both full- and reduced-fat versions, the whole-grain soy flour features 80% more dietary fibre than whole wheat and can be used at levels that support 'good source' or 'excellent source' of protein and/or fibre claims. Website <<http://www.kerryamericas.com/>>

Coca Cola to move into health drinks

Coca Cola is moving into the 'functional foods' market and is planning to target consumers with a new range of health drinks containing phyto-sterols. According to a UK Food Standards Agency application, the company wants to put phytosterols into a range of fruit juices, including fruit nectars and tomato juice. It is expected to launch the new range of health drinks next year.

Soy-based beer consumption in Japan

Japanese beer makers have launched a range of new alcoholic drinks based on soy. So called 'quasi-beer' is enjoying strong demand. It appeals to consumers because it is cheaper than regular beer or low-malt beer which have higher tax rates under the Japanese tax system.

No-malt quasi-beer has emerged as the so-called 'third' segment of the Japanese beer market. Regular beer is referred to as the first segment and 'happoshu' low-malt quasi-beer as the second. The third segment already comprises 5% of the Japanese market for beer and quasi-beer.

Freeze dried natto nuts

Natto is a fermented soybean product with a characteristic taste. Japanese company, M & M Co Ltd, exhibited their freeze dried natto nuts at London's Food and Drink Expo in March. 'Natto Nuts Neba' is freeze dried natto that is convenient for carrying and eating anywhere and contains twice the amount of nattokinase as fresh natto.

The manufacturers claim that nattokinase is good for memory, prevention of senile dementia, and faster blood flow and is more effective in the evening than in the morning. 'Natto Nuts Neba' are available in Soy Sauce Flavour, Garlic Flavour and Natural Flavour.

Contact M&M Co. Ltd, 3-2-44-2F Omachi, Akita 010 0921, Japan, tel +81 18 862 9287, e-mail: tokyo@mandm-akita.com.

Soybeans for the Food and Soyfood Industry.

30 November 2005

Half day seminar organised by the American Soybean Association at FI Europe, Parc des Exposition, Paris, France. More details from asabru@asa-europe.org.



Worldnutra 2005
<<http://www.worldnutra.com>>

**6th International Conference & Exhibition on
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October 16-19, 2005 - Anaheim, CA**
Pre-Conference Symposium on Products and Ingredient Formulations for
Weight Management & Wellness, October 16, 2005 - Anaheim, CA

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The Alpro Company

Alpro is the European pioneer in soybean products. A healthy series of Alpro soja and Provamel drinks, desserts and yoghurt is available in department stores and organic food shops in Europe.

Alpro has production sites in Wevelgem (Belgium), Issenheim (France) and Kettering (UK) with over 500 employees.

The Alpro Products

Alpro has been successful in various different European markets for a number of years now.

Our consumers are extremely conscious, particular about choosing products that improve their diet and vitality.

Alpro means a conscious choice:

- for daily investment in health
- with the best ingredients
- for long-life vitality
- with no compromises in taste or convenience

All products are 100% vegetable, free from cow's milk protein, free from lactose and contain no cholesterol.

The Alpro Traceability System

Alpro soja uses a traceability system to ensure that our products and ingredients avoid contamination with genetically modified organisms (GMO's). The system is approved and monitored by independent auditors cert id.

The Alpro Innovation and Expertise

Today's consumers are increasingly well informed. They demand consistent quality in products and innovation and strive to maintain good health through active lifestyles, wholesome foods and general well-being.

Today the role of nutrition goes way beyond the notion of correcting a deficiency. Now it is about maintaining health and well-being.

Based on in-depth consumer understanding, our R&D department works on the development of new products and on continuously upgrading our existing products, in order to meet the demand by health-conscious consumers for products that taste delicious.

Our Science & Nutrition Department plays a key-role in providing information to the customer concerning product composition, nutritional value etc. The department closely follows all research on soy and its components in order to communicate the facts to medical groups and consumers.

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6

Renewed interest in soy and bone research expected at 6th International Soy Symposium

The 6th International Soy Symposium on the Role of Soy In Preventing and Treating Chronic Disease will be held from 30 October to 2 November 2005 at the Renaissance Chicago Hotel. A one day Workshop on 'The Effects of Soy on Growth and Development; How much do we know?' will also be held on the 28

October. Here we ask Mark Messina, Co-chairman of the Symposium about his expectations for this major event in the soy research world's calendar.



Mark Messina

What are you personally looking forward to most at this Symposium?

By the time the meeting actually takes place I have seen all of the abstracts so there aren't many surprises. However, the discussion periods following the formal presentations and that take place during the poster sessions are usually quite lively and informative. But these symposia are also a great time to catch up with colleagues and friends. This becomes more true with every meeting as my relationships with colleagues evolve.

Previous symposia have been very successful in terms of the numbers of participants, quality of presentations etc, what are your hopes for this one?

I always hope for a large turnout and great presentations but these elements of the meeting are largely beyond my control. With few exceptions the oral presentations are selected by the advisory board on the basis of the abstract submissions. One hopes the speakers do a good job presenting their data. In regard to numbers, I try to restrain my expectations and am always a little anxious about this. There is more soy research than ever being conducted and to me, the field is more interesting than ever because the number of areas being investigated has expanded greatly. But there are many competing meetings and obligations. Certainly though, my experience is that those who do attend are quite knowledgeable.

What will be different about this symposium from the previous meetings?

Several sessions will be designed in a debate forum to evaluate specific hypothesis. Possible special sessions include "Evaluating the equal hypothesis" and "Reevaluating the cholesterol-lowering effects of soy protein in light of recent data."

In your view what areas of research are emerging as the most promising?

Bones! A new 2-year study just reported found very nice skeletal benefits of isoflavone-rich soy protein and generally, the clinical evidence is encouraging. Furthermore, there are 3 large, long-term clinical trials underway in the United States. So within a few years, we may have definitive data. This having been said, in my view the most exciting hypothesis is that adolescent soy intake reduces adult breast cancer risk. If this hypothesis is confirmed, this benefit of soy will far outweigh any other. It will however be a difficult hypothesis to prove. But I am very hopeful.

Has any particular piece of research surprised you and if so what?

Yes, probably the recent short-term studies, primarily conducted in the United Kingdom, showing cognitive benefits of isoflavones. Long term data are needed to be sure, but it is surprising to me that effects were noted in a matter of weeks. As I age this area of research becomes of particular interest to me.

Continued on page 7





7

How close are we to resolving some of the areas of controversy e.g cancer, soy infant formulas, soy as HRT replacement?

I am confident that soy consumption does not exert adverse effects and in some ways think we are close to showing this is the case. For breast cancer, in my view the evidence increasingly suggests soy does not exert estrogenic effects on breast tissue and does not increase breast cancer risk in high-risk women or breast cancer survivors. I have recently submitted an article on this topic that will hopefully be accepted for publication.

I think the work by Thomas Badger at the Arkansas Children's Nutrition Center in the United States will go a long way toward confirming the safety of soy infant formula. In regard to HRT, I think the question has changed. Long-term use of HRT is no longer being recommended. But I don't think soy is the complete answer for reducing risk of osteoporosis and coronary heart disease and alleviating hot flashes. However, I firmly believe that the evidence indicates that soyfoods are part of the answer and for that reason, as well as others, warrant a bigger role in non-Asian diets than they currently have.

The organisers must have had to make some hard decisions about what to include and what not to include. What criteria did they use and is there any particular subject that you wish could have been included?

Actually, it is easy because for the most part, this is the responsibility of the 14 scientific advisors. Mostly everything is done on the basis of the abstracts. It is interesting to note how the same abstract will be highly rated by some and very poorly rated by others.

In your view what is likely to be the area of research to watch out for in the future?

Not sure if it qualifies as an area of research but I think we need to pay more attention to how the metabolism of isoflavones affects efficacy. In response to the ingestion of the same amount of isoflavones serum total isoflavone levels and the levels of individual metabolites vary dramatically. If isoflavones are biologically active, then this variation probably affects health outcomes and differences in isoflavone metabolism have likely contributed to the often conflicting results among studies. This is likely to be especially true because many of the human studies involve relatively small sample sizes.

The other general area is soy peptides. Emerging evidence suggests that peptides are absorbed and are biologically active. I think this is surprising to many nutritionists who were basically taught that one could only absorb single amino acids or di- and tripeptides. This appears not to be the case, however. There is always so much to learn.

CALL FOR PAPERS AND POSTERS.....SUBMIT BY JUNE 15, 2005

Have new research to share on the health effects of soy and soybean components? Submit your abstract for presentation at the 6th International Symposium on the Role of Soy in Preventing and Treating Chronic Disease, October 30-Nov 2, 2005. Abstracts will be accepted for review until June 15, 2005. The advisory board will review abstracts and authors will be notified shortly after the due date regarding acceptance and presentation format chosen.

Submit Today! Complete Submission Details are available at: [<http://www.aocs.org/meetings/soy>](http://www.aocs.org/meetings/soy)

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25–26 May

Obesity Management Forum: The Role of Soyfoods, University of Illinois, Champaign, Illinois, USA, tel: +1 217 244 1706, e-mail; obesityandsoy@uiuc.edu, website: <http://www.obesityandsoy.uiuc.edu>.

9–10 June 2005

Developing Functional Foods with Omega-3 Fatty Acids, University of Massachusetts, USA, tel: +1 413 545 1026, e-mail: edecker@foodsci.umass.edu, <http://www.umass.edu/foodsci/decker.html>.

16–20 July 2005

Institute of Food Technologists Annual Meeting & Food Expo, New Orleans, USA, tel: +1 312 782 8424, e-mail: info@ift.org, website: <http://www.ift.org>.

27 August–2 September

7th Annual Practical Short Course, Texturized Vegetable Protein & Other Soy Products, Texas A&M University. Contact: Mian Riaz at mnriaz@tamu.edu, website: <http://foodprotein.tamu.edu/extrusion/index.html>.

15–18 September 2005

Natural Products Expo East, Washington DC, USA, tel: New Hope +1 303 390 1776, e-mail: tradeshow@newhope.com, website: <http://www.expoeast.com>.

24–25 September

2nd Nutrition and Health Show, London, UK. Website: <http://www.nutritionandhealthshow.co.uk>.

29 September–2 October

Childhood Obesity: New Insights and Consequences, Vienna, Austria. Contact: European Childhood Obesity Group, : +43 1 588 04 0, e-mail: congress@mondial.at, website for accompanying exhibition: <http://www.maw.co.at>.

16 October 2005

Symposium on Products & Ingredient Formulations for Weight Management and Wellness, Anaheim, California, USA, tel: +1 979 694 7031, e-mail: nutra@worldnutra.com, website: <http://www.worldnutra.com>.

16–19 October 2005

World Nutra 2005 - 6th International Conference & Exhibition on Nutraceuticals and Functional Foods, Anaheim, California, USA, tel: +1 979 694 7031, e-mail: nutra@worldnutra.com, website: <http://www.worldnutra.com>.

28 October – 2 November

6th International Symposium on the Role of Soy in Preventing and Treating Chronic Disease, Chicago, Illinois, USA. Including a one day workshop on 'Effects of Soy on Growth and Development: How much do we know? Website <http://www.aocs.org/meetings/soy>.

30 November 2005

Soybeans for the Food and Soyfood Industry. Half day seminar organised by the American Soybean Association at FI Europe, Parc des Exposition, Paris, France. More details from asabru@asa-europe.org.

8–9 December 2005

Practical Short Course - Speciality and Functional Oils: Consumer Perceptions, Market Trends and Health, Ghent, Belgium, tel: +32 (0)51 31 12 74, fax: +32 (0)51 31 56 75, e-mail: flipids@pro.tiscali.be, website: <http://membraneworld.com/flipids.htm>.

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12–13 October 2006

4th International Conference
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More news in the next issue
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